(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 25 November 2004 (25.11.2004)

(10) International Publication Number WO 2004/101673 A3

(51) International Patent Classification7:

C08L 23/14

(21) International Application Number:

PCT/US2004/014652

(22) International Filing Date: 10 May 2004 (10.05.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/468,915

8 May 2003 (08.05.2003)

- (71) Applicant (for all designated States except US): NOV-OLEN TECHNOLOGY HOLDINGS C.V. [NL/NL]; Oostduinlaan 75, NL-2596 JJ The Hague (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MAIER, Ralph-Dieter [DE/US]; 5526 Bethany Road, Mason, Ohio 45040 (US). GALIATSATOS, Vassilious [US/US]; 963 Evergreen Park Lane, Lebanon, OH 45036 (US). ROESSNER, Dean, Anthony [US/US]; 326 Fieldcrest Lane, Loveland, OH 45140 (US). SETTY, Susan, Patricia [US/US]; 12130 Regency Run Court #4, Cincinnati, OH 45240 (US).
- (74) Agents: CALDERONE, Adrian, T. et al.; Dilworth & Barrese, LLP, 333 Earle Ovington Boulvard, Uniondale, NY 11553 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 31 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: POLYPROPYLENE RESIN COMPOSITION

(57) Abstract: A polymer blend includes a first random copolymer of propylene and one or more C_2 - C_{20} α -olefins other than propylene lene having a melting point of above 116°C and up to about 145°C and which constitutes from about 60 weight percent to about 95 weight percent of the composition, and a second random copolymer of propylene and one or more C_2 - C_{20} α -olefins other than propylene having a melting point of from about 70°C to no more than 116°C and which constitutes from about 5 weight percent to about 40 weight percent of the composition. The polymer blend includes a xylene soluble fraction having a weight average molecular weight of above about 100 kg/mol and an intrinsic viscosity of above about 1.0 dl/g.



International Application No PCT/US2004/014652

A CLASS	SIEICATION OF CUR IFOT MATTER		101/032004/014032		
ÎPC 7	SIFICATION OF SUBJECT MATTER C08L23/14				
According t	to International Patent Classification (IPC) or to both national	classification and IPC			
B. FIELDS	SEARCHED				
Minimum d	ocumentation searched (classification system followed by cla	ssification symbols)			
IPC /	C08L				
Documenta	ation searched other than minimum documentation to the exte	nt that such documents are include	d in the fields searched		
Electronic d	data base consulted during the International search (name of	data hasa and uh			
EPO-In	iternal, WPI Data	adia base dilu, where practical, se	arch terms used)		
	ENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with Indication, where appropriate, of	the relevant passages	Relevant to claim No.		
X	WO 00/11076 A (FERRARI PAOLO ANTEO (IT); MONTECH USA INC (2 March 2000 (2000-03-02) cited in the application	; PELLICONI (US))	1-12,26		
Y	example 1		13-24, 27-32		
Y	WO 02/32985 A (BURRAGE CHARLE EXXONMOBIL CHEM PATENTS INC (THOMAS) 25 April 2002 (2002-0 tables 1,4	13-24, 27-32			
A	EP 0 483 523 A (HIMONT INC) 6 May 1992 (1992-05-06) cited in the application examples 1,2		1-24, 26-32		
ļ		-/			
		•			
X Furthe	er documents are listed in the continuation of box C.	X Patent family memb	pers are listed in annex.		
Special cate	egories of cited documents :				
CONSIDE	at defining the general state of the art which is not red to be of particular relevance	OI DIDITO DATE AND ROT	d after the international filing date in conflict with the application but principle or theory underlying the		
ming dat		"X" document of particular re	elevance; the claimed invention		
Walchis	t which may throw doubts on priority claim(s) or cited to establish the publication date of another	involve an inventive ste	over or cannot be considered to p when the document is taken alone		
O" documen	or other special reason (as specified) at referring to an oral disclosure, use, exhibition or		elevance; the claimed invention the		
otner me P" document	eans t published prior to the international filing date but n the priority date claimed	ments, such combination in the art. "&" document member of the	with one or more other such docu- on being obvious to a person skilled		
Date of the ac	tual completion of the international search	Date of mailing of the Inte			
14 October 2004		0	0 8 FEB 2005		
lame and mai	iling address of the ISA European Patent Office, P.B. 5818 Patentlaan 2	Authorized officer			
	NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Schmidt, H	l		
m PCT/ISA/210	(second sheet) (January 2004)				

International Application No
PCT/US2004/014652

C.(Continua	tion) DOCUMENTS CONSIDERED TO BE RELEVANT	PC1/US2004/014652		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	EP 0 263 718 A (MITSUI PETROCHEMICAL IND) 13 April 1988 (1988-04-13) cited in the application tables 1-4	1-24, 26-32		
	•			
	continuation of second sheet) (January 2004)			

ハシ

INTERNATIONAL SEARCH REPORT

International application No. PCT/US2004/014652

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
see additional sheet
As all required additional search fees were timely paid by the applicant, this international Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely pald by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-24, 26-32
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-24,26-32

as far as compositions comprising blends of polypropylene a) and b) are concerned

2. claim: 25

as far as compositions comprising fractions a)-e) are concerned

Information on patent family members

International Application No PCT/US2004/014652

		PC1/052004/014652		
Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 0011076 A	02-03-2000 -	ATU AU BRACN DE DE DE BU DP NOL US A	248892 T 762538 B2 5163499 A 9915469 A 2306034 A1 1275144 T 69910967 D1 69910967 T2 0011076 A1 1025162 A1 2205862 T3 0100378 A2 24288 A 2002523543 T 20002000 A 340052 A1 499455 B 6395831 B1 200001595 A	15-09-2003 26-06-2003 14-03-2000 04-12-2001 02-03-2000 29-11-2000 09-10-2003 22-07-2004 02-03-2000 09-08-2000 01-05-2004 28-06-2001 13-07-2000 30-07-2002 17-04-2000 15-01-2001 21-08-2002 28-05-2002 17-10-2000
WO 0232985 A	25-04-2002	AU WO	1663402 A 0232985 A1	29-04-2002 25-04-2002
EP 0483523 A	06-05-1992	IT AU AU BR CCS DE DE DE FI JP KR NO PK NO PK USA	1243430 B 147090 T 650285 B2 8481391 A 9104160 A 2052347 A1 1061031 A ,C 9102970 A3 69123935 D1 69123935 T2 483523 T3 0483523 A1 914524 A 59428 A2 960 B 3188492 B2 6025489 A 199685 B1 9101279 A1 913788 A 99082 A ,B 280077 B6 2059670 C1 5296548 A 9107576 A	10-06-1994 15-01-1997 16-06-1994 02-04-1992 02-06-1992 29-03-1992 13-05-1992 13-02-1997 17-07-1997 16-06-1997 06-05-1992 29-03-1992 29-03-1992 27-09-1996 16-07-2001 01-02-1994 15-06-1999 04-05-1992 30-03-1992 31-08-1992 12-07-1999 10-05-1996 22-03-1994 24-06-1992
EP 0263718 A	13-04-1988	JP JP JP JP JP JP JP	1018633 A 2059125 C 7096284 B 2050423 C 7030218 B 63095210 A 1954727 C 6086507 B 63095214 A	23-01-1989 10-06-1996 18-10-1995 10-05-1996 05-04-1995 26-04-1988 28-07-1995 02-11-1994 26-04-1988

Information on patent family members

International Application No PCT/US2004/014652

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
EP 0263718 A		AT CA CN CN DE EP KR US	75232 T 1309541 C 87107496 A ,C 1061783 A ,C 3778475 D1 0263718 A2 9200173 B1 4822840 A 4894421 A	15-05-1992 27-10-1992 20-04-1988 10-06-1992 27-05-1992 13-04-1988 09-01-1992 18-04-1989 16-01-1990

Form PCT/ISA/210 (patent family annex) (January 2004)